Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiology

Acute Transverse Myelitis Masquerading as an Intramedullary Tumor: A Diagnostic Dilemma

Mohamed EL BIADI[1*], Mohamed ABDELLAOUI[2]

[1]Department of Radiology, Avicenne Military Hospital, Cadi Ayaad University, Marrakesh, Morocco
[2]Department of Radiology, Mohammed V Military Hospital, Mohammed V University, Rabat, Morocco

DOI: https://doi.org/10.36347/sjmcr.2025.v13i04.009 | **Received:** 28.02.2025 | **Accepted:** 02.04.2025 | **Published:** 08.04.2025

***Corresponding author:** Mohamed EL BIADI
Department of Radiology, Avicenne Military Hospital, Cadi Ayaad University, Marrakesh, Morocco

Abstract **Case Report**

Acute transverse myelitis (ATM) is a rare inflammatory disorder of the spinal cord that can present as acute cauda equina syndrome (CES). Distinguishing ATM from intramedullary tumors remains a diagnostic challenge. We report the case of a 32-year-old woman with no medical history who developed acute paraplegia and urinary retention over one week. Initial MRI revealed a well-defined intramedullary lesion at D12-L1 with T2 hyperintensity and homogeneous contrast enhancement, raising suspicion of ependymoma or another spinal tumor. However, she showed rapid improvement with corticosteroid therapy, regaining sphincter control within five days and ambulation within three weeks. A follow-up MRI after one month was entirely normal, confirming the diagnosis of idiopathic ATM. This case highlights the importance of considering inflammatory causes in acute CES and the critical role of clinical and radiological follow-up in differentiating ATM from neoplastic lesions.

Keywords: Acute transverse myelitis (ATM), Cauda equina syndrome (CES), Intramedullary lesion, Corticosteroid therapy, Differential diagnosis.

INTRODUCTION

Acute transverse myelitis (ATM) is an inflammatory disorder affecting the spinal cord, leading to motor, sensory, and autonomic dysfunction. It can be idiopathic or secondary to infections, autoimmune diseases, or demyelinating disorders [1].

Lumbar ATM is rare and can clinically and radiologically mimic intramedullary tumors such as ependymomas or astrocytomas, making early diagnosis and appropriate management crucial [2]. This case report describes a rapidly reversible case of lumbar ATM, initially mistaken for a spinal tumor, emphasizing the importance of follow-up MRI in distinguishing these conditions.

CASE PRESENTATION

Clinical History and Examination

A 32-year-old woman with no prior medical or surgical history presented to the Emergency Department of the Mohammed VI Military Hospital in Dakhla with a one-week history of progressive paraplegia and urinary retention.

Neurological examination revealed:

- Complete motor deficit of the lower limbs (0/5).
- Saddle anesthesia and perineal hypoesthesia.
- Absent deep tendon reflexes in the lower limbs.
- A distended bladder confirmed on ultrasound.

Imaging and Diagnosis

An urgent lumbar MRI revealed (Figure 1):

- A well-defined, centrally located intramedullary lesion extending from D12 to L1.
- T1 hypointensity and T2 hyperintensity.
- Homogeneous and mildly intense contrast enhancement after gadolinium injection.

The imaging findings suggested a tumor-like process, particularly ependymoma, but ATM remained a differential diagnosis. Comprehensive infectious and autoimmune workups were negative.

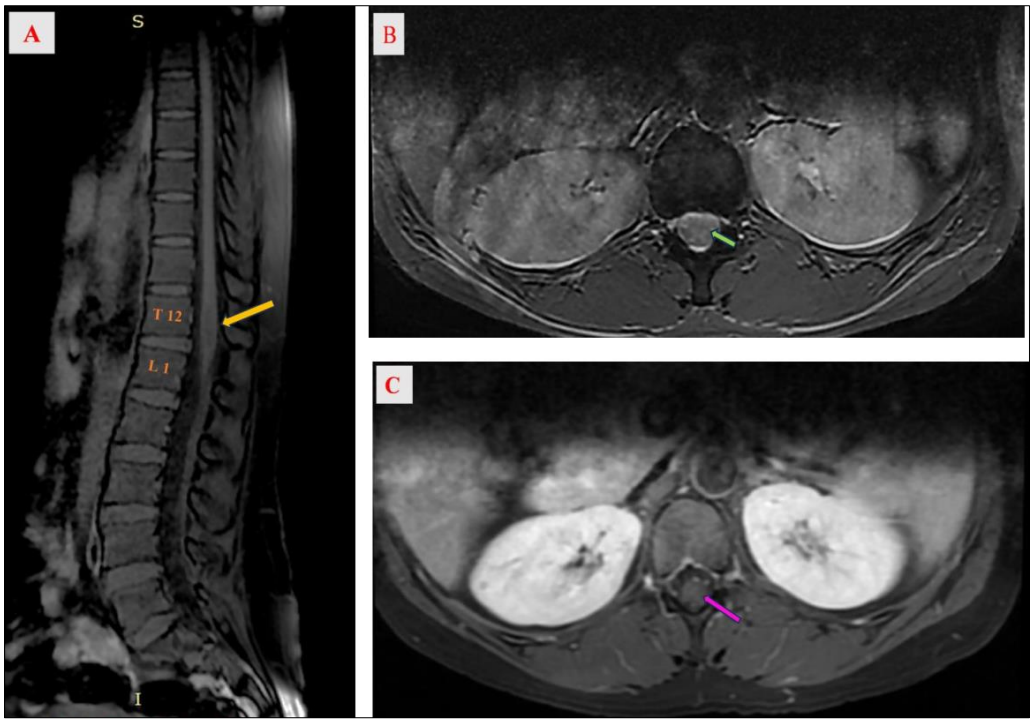

Figure 1: The MRI appearance of the intramedullary process. Sagittal T1 sequence (A); axial T2 (B) and T1 fat-sat sequences after gadolinium injection (C). Note the homogeneous and mildly intense enhancement (Pink arrow)

Management and Outcome

The patient was treated with intravenous methylprednisolone (1 g/day for 5 days), resulting in:

- Resolution of bladder dysfunction within five days.
- Gradual recovery of motor function, with independent walking restored in three weeks.
- A follow-up MRI after one month showing complete resolution of the spinal cord lesion, confirming the diagnosis of idiopathic ATM (Figure 2).

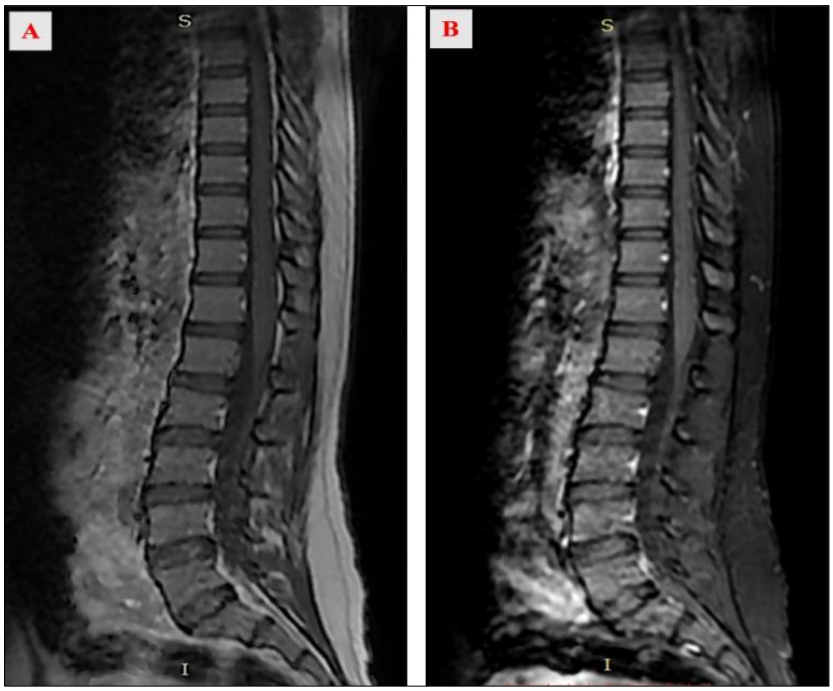

Figure 2: Follow-up MRI after one month with sagittal T1 sequences before (A) and after gadolinium injection (B), showing the disappearance of the intramedullary process. Final diagnosis: Acute transverse myelitis of thoracolumbar localization

DISCUSSION

1. ATM vs. Intramedullary Tumors: A Diagnostic Challenge

Differentiating ATM from spinal tumors is challenging due to overlapping MRI features [3].

Feature	ATM	Intramedullary Tumor
Clinical Course	Acute/subacute	Slowly progressive
MRI Findings	T2 hyperintensity, no mass effect	Well-defined mass, expansion
Contrast Enhancement	Homogeneous or absent	Homogeneous (ependymoma) or heterogeneous (astrocytoma)
Corticosteroid Response	Rapid improvement	Minimal or no response
Follow-up MRI	Resolution	Persistent or progressive lesion

This case highlights how ATM can masquerade as an intramedullary tumor, emphasizing the role of clinical follow-up and repeat imaging.

2. Etiologies of ATM: A Necessary Investigation

ATM can result from various causes [4, 5]:

- Idiopathic (post-infectious, paraneoplastic, autoimmune).
- Infectious (herpes zoster virus, HIV, Mycobacterium tuberculosis).
- Inflammatory disorders (multiple sclerosis, neuromyelitis optica).
- Systemic diseases (lupus, sarcoidosis).

In this case, no underlying etiology was identified, suggesting idiopathic ATM.

3. Treatment and Prognosis

Management strategies for ATM include [6, 7]:

- High-dose corticosteroids (methylprednisolone 1 g/day for 3–5 days) to reduce inflammation.
- Plasma exchange therapy in refractory cases.
- Physical rehabilitation for functional recovery.

The prognosis depends on early intervention. While complete recovery occurs in <50% of cases, our patient had an excellent outcome, highlighting the importance of prompt diagnosis and treatment [8, 9].

CONCLUSION

This case underscores the diagnostic dilemma between ATM and spinal tumors, especially in acute cauda equina syndrome. Rapid improvement with corticosteroids and complete lesion resolution on follow-up MRI confirmed the inflammatory rather than neoplastic origin. Awareness of this entity is crucial for early diagnosis, timely management, and preventing unnecessary surgical intervention.

REFERENCES

1. L. B. Krupp, *et al.*, "Neuromyelitis optica spectrum disorder: diagnostic and therapeutic challenges," Neurology, vol. 97, no. 2, pp. S1-S12, 2021.
2. T. W. West, "Transverse myelitis – A review of the presentation, diagnosis, and initial management," Curr Opin Neurol., vol. 32, no. 4, pp. 511-518, 2019.
3. M. A. Mealy, *et al.*, "Evaluation and management of transverse myelitis," JAMA Neurol., vol. 77, no. 1, pp. 136-145, 2020.
4. B. G. Weinshenker, *et al.*, "Neuromyelitis optica and related disorders," Neurology, vol. 92, no. 6, pp. 278-289, 2019.
5. A. Jacob, *et al.*, "Current concepts in neuromyelitis optica," Lancet Neurol., vol. 17, no. 9, pp. 800-812, 2018.
6. N. Borisow, *et al.*, "Diagnosis and treatment of neuromyelitis optica spectrum disorder," J Neuroimmunol., vol. 360, p. 577682, 2021.
7. V. V. Brinar, *et al.*, "Clinical spectrum of inflammatory myelopathies," J Neurol Sci., vol. 412, p. 116765, 2020.
8. S. J. Pittock, *et al.*, "Prognostic factors in transverse myelitis," Ann Neurol., vol. 92, no. 4, pp. 520-535, 2022.
9. J. Sellner, *et al.*, "Predictors of functional outcome in transverse myelitis," J Neurol., vol. 268, no. 3, pp. 1206-1215, 2021.